



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

Tohru Hashioka et al

Serial No.: 10/635,674

Group Art Unit: 1773

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Examiner: Nakarani, Dhirajlal S.

For:

HEAT-SHRINKABLE POLYOLEFIN FILM

DECLARATION OF NORIMI TABOTA UNDER 37 C.F.R. 1.132

Honorable Commissioner of Patents and Trademarks
Washington, D.C. 20231

I, Norimi TABOTA, c/o Toyo Boseki Kabushiki Kaisha Inuyama Works, 344, Aza-machata, Oaza-kotsu, Inuyama, Aichi 484-8508 Japan, declare and say as follows:

1. I am one of the joint inventors of the above-identified application;
2. I graduated from Fukui University, Faculty of Engineering, Department of Applied Chemistry, Fukui, Japan in March 1985, and received a Master Degree of Applied Chemistry from the Graduate School of Fukui University in March 1987;
3. Since April 1987 to the present, I have been employed by Toyo Boseki Kabushiki Kaisha and engaged in research and development of plastic films and related products.

I read the Office Action issued on February 28, 2005 in the above identified application and the prior art cited therein, that is, US Patent No. 5,573,717 to Peiffer et al. Then, I carried out an experiment to show that a film produced in accordance with Example 1 of Peiffer et al cannot have a percentage of thermal shrinkage of at least 50% at 95°C x 10 seconds in the primary stretching direction of the film.

I beg to report the results of the experiment below.

Experiment

A three layer film having an overall thickness of 40 µm was produced by co-extrusion and subsequent stepwise orienting in the machine and transverse directions. Each top layer had a thickness of 0.6 µm.

The details of a base layer and top layers are as follows:

A) Base layer:

- 94.85% by weight of highly isotactic polypropylene (available from Solvay under the brand name Eltex® PHP 405);
- 5.0% by weight of aromatic polycarbonate (Apec® HT, natural color, available from by Bayer);
- 0.15% by weight of N,N-bis-cthoxyalkylamine

B) Top layers:

- 98.77% by weight of random ethylene/propylene copolymer having a C₂ content of 4.5% by weight;
- 0.33% by weight of SiO₂ (a mean particle size of 2 µm);
- 0.90% by weight of polydimethylsiloxane having a viscosity of 30,000 mm²/s

The production conditions in the process steps were as follows:

| | | | |
|----------------------------------|--------------|-------------------------------------|--------|
| Extrusion: | Temperatures | A layer: | 280°C. |
| | | B layers: | 280°C. |
| | | Temperature of the draw-off roller: | 30°C. |
| Machine-direction stretching: | | Temperature: | 130°C. |
| | | Stretching ratio: | 6.5 |
| Transverse-direction stretching: | | Temperature: | 170°C. |
| | | Stretching ratio: | 8.5 |
| Fixing: | | Temperature: | 140°C. |
| | | Convergence: | 15% |

The film produced in the above was subjected to the measurement of a percentage of thermal shrinkage as described in page 21, lines 11-21 of the specification of the above-identified patent application.

The results are shown in the following Table:

Table

| | Machine direction (primary stretching direction) | Transverse direction |
|---|---|-------------------------|
| Percentage of thermal shrinkage at 95°C x 10 seconds | 2.0% | 0.6% |
| Percentage of thermal shrinkage at 80°C x 10 seconds | 0.4% | 0% |

As can be seen from the above results, the laminate film produced in accordance with the procedures of Example 1 of Peiffer et al cannot have a large percentage of thermal shrinkage at 95°C x 10 seconds or at 80°C x 10 seconds in either stretching direction. Such a film cannot be used as a heat-shrinkable film.

The undersigned declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so that made are punishable by fine or imprisonment, or both, under 18 U.S. Code 1001 and that such willful false statements may be jeopardize the validity of this application or any patent issuing thereon.

Norimi Tabota
Norimi Tabota

Dated this 26th day of August, 2005